REMARKS

The Examiner is thanked for the Official Action of 05/04/2004. This request for reconsideration is intended to be fully responsive thereto.

Drawing Objection

Claim 5 was objected to under 37 CFR 1.83(a) because no figure shows the feature "a diameter of one of said work roll is larger than a diameter of the remaining work rolling apparatus having a pair of work rolls and a pair of backup rolls". However, the Examiner is respectfully directed to review FIGS. 7 which clearly shows the condition that the diameter of one of (lower) work roll 43 is larger than the remaining (upper) work roll 43. Therefore, this objection should be withdrawn.

Specification Objection and Amendment

The Applicant agrees with the Examiner as to the changes in the specification. Therefore, specification is amended to comply with the Examiner's suggestions. No new matter has been added.

Claim Objections

The Examiner objected to Claim 5 because of the words "said work roll". The Applicant agreed with the Examiner and amended Claim 5 accordingly. No new matter has been added.

Claim Rejections, 35 U.S.C. § 112

Claim 5 has been rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The Examiner suggested that the

original specification does not provide any support for a diameter of one of said work roll is larger than a diameter of the remaining work roll. On the other hand, the Examiner admitted that the specification discloses a diameter of one of said work roll is larger than a diameter of the remaining work roll (Fig. 7).

The Examiner is respectfully suggested to refer to the last two paragraphs in section, (i) Operation of the roller, which is in the second and third paragraphs of page 10 in the substituted specification filed on March 11, 2003. The paragraphs state:

> "Fig. 7 uses three work rolls, wherein the lower work roll has a larger diameter and is hard to be bent; the upper work roll has a smaller diameter so as to apply higher unit-area pressure on the electrode structure 1; pushing back by the backup roll 42 adjusts the amount of bending; and a uniform large pressure may be applied to the electrode structure 1. In addition, the adjustment of the thickness of the electrode 1 and the adjustment of the spacer may be facilitated.
>
> Under the above-condition, for example, the thickness of the electrode structure 1 prior to the rolling is set to be 150μ and the gap of the work roll while rolling is to be 80μ, it was acknowledged that the thickness of the electrode structure after rolling regains and becomes desirable 100μ."

These two paragraphs explain the use of work roll with a larger diameter and work rolls with smaller diameter and the advantage of this feature. Therefore, the Examiner's rejection on new ground should be withdrawn.

Double Patenting Objection

Claim 8 has been objected to under 37 CFR 1.75 as being a substantial duplicate of Claim 4. The Applicant agrees with the Examiner and cancels Claim 8. No new matter has been added.

Claim Rejections, 35 U.S.C. § 102

The Examiner rejected Claims 3, 6 and 13 under 35 USC § 102(b) as being anticipated by Schnyder (US 4,480,452). The Examiner suggested that Schnyder discloses a rolling apparatus equivalent to the one in Claims 3, 6, and 13.

Schnyder discloses an automatic control or regulation device that serves to controllably adjust a predetermined thickness of the web-like material subjected to the rolling operation (column 1, lines 21-24). Here, the web-like material may include a thin metal foil.

However, by this claim amendment, the Applicant amended Claim 3 to limit this invention to rolling of "a mixture of a binder polymer or an ion conductive polymer and a powdered electrode active substance coated on at least one surface of a current collecting material of a plate, foil, or mesh aluminum or copper". This amendment is clearly supported by the substituted disclosure describing (b) Electrode structures, (n) Current collecting material, and (h) Application to current-collecting member. No new matter has been added.

Further, according to *MPEP 2131*, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference". Schnyder does not teach every element of the presently claimed invention.

Regarding the use of elastic material for the backup rolls, the Examiner stated that it is well known that an elastic coating on the surface of a roll provides the surface of the rolls with flexibility. However, the Examiner is reminded that the mere fact that a prior art reference can be modified does not render the resultant combination obvious. The prior art must also suggest the desirability of the combination. *MPEP 2143.01.*

The present invention utilizes the elastic material in order to avoid using a cooling

medium, such as oil, which could possibly ruin this particular object, i.e., electrode material, to be rolled. Schnyder simply fails to provide proper motivation to modify the technology to render the presently claimed invention obvious. Thus, Applicant respectfully submits that the Examiner is impermissibly reconstructing the Applicant's invention.

Claim Rejections, 35 U.S.C. § 103 (Claims 3, 6, and 13)

The Examiner rejected Claims 3, 6, and 13 under 35 U.S.C. 103(a) as being anticipated by Schnyder over Lehmann et al. (US 4,605,366). The Examiner suggested that Lehmann can be applied to show that it is known in the rolling art to provide a rolling apparatus with a controlled deflection backup roll having an elastic surface in order to regulate contact pressure or pressing action upon a work roll (column 4, line 2).

Lehmann et al. is similar to Schnyder in that it has an extremely different rolling and pressurizing structure compared to the present invention. The roll structure of Lehmann et al. mainly comprises the upper roll 1, lower rolls 2, and controlled deflection roll 29, wherein the controlled deflection roll 29 has a substantially cylindrical roll shell/jacket 31 of highly elastic material and thermal conductivity. The roll shell 31 rotates about a stationary roll support/beam 30, and hydrostatic support/pressure pistons 32 are sealingly guided in support cylinders 33 of the roll support/beam 30. The hydrostatic support/pressure piston 32 supports an internal surface of the roll shell 31 while having a gap from the roll support 30. It is necessary for Lehmann et al. to have the cooling device 36 to reduce the temperature of the rolls.

The present invention has the work roll, backup roll, and pressuring device, wherein the elastic material is coated on the work roll surface, thereby enabling the application of large pressure on the electrode structure and the rolling force almost

fills the void in the coating layer of the electrode structure body. The pressuring device presses the backup rolls toward the work roll by the drive unit. These structural differences greatly influence the resultant product.

Previously cooling devices were required. The structure of the present invention eliminates the problem of having to use cooling device/means, such as oil or air, and allows for successive and continuous operation. As such, the present invention eliminates excessive components and the need of cleaning/reactivating active materials due to the cooling means.

Lastly, neither Schnyder nor Lehmann et al. teaches the limitation of Claim 3 added in the above-amendment, i.e., rolling and pressing a mixture of a binder polymer or an ion conductive polymer and a powdered electrode active substance coated on at least one surface of a current collecting material of a plate, foil, or mesh aluminum or copper.

Claim Rejections, 35 U.S.C. § 103 (Claims 4, 7-8, and 14)

The Examiner rejected claims 4, 7-8, and 14 because of Schnyder and Frischknecht et al (US 4,649,986). The Examiner stated that Schnyder does not disclose a spacer positioned between the housings but Frischknecht teaches that it is well known in the rolling art, to provide a rolling apparatus with a spacer between two roll housings in order to alter/adjust the size of the gap between the rolls.

Claims 4, 7-8, and 14 are dependent of claim 3 and 13. Because of the same reasons stated above, claims 4, 7-8 and 14 should be allowed.

Claim Rejections, 35 U.S.C. § 103 (Claims 5, 15, and 16)

The Examiner rejected claims 5, 15, and 16 because of Schnyder and Worthington (US 2,139,872). The Examiner stated that Washington teaches that it is

well known in the rolling art to provide a rolling apparatus having a pair of work rolls for compress a material therebetween, wherein one of the work rolls positioned between a back up roll and the work roll with the larger diameter. Washington teaches this roll arrangement in order to obtain an improvement in the physical property of the material.

Claims 5, 15, and 16 are dependent of claim 3 and 13. Because of the same reasons stated above, claims 5, 15, and 16 should be allowed.

Conclusion

Accordingly, it is submitted that Claims 3-7 through 7 define the invention over the prior art and notice to this effect is respectfully solicited. Applicant has either complied with all Examiner recommendations or has effectively argued against the Examiner's objections/rejections and believes that all currently pending claims are now in condition for allowance. No new matter has been added.

Should the examiner believe further discussion regarding the above claimed language would expedite prosecution he is invited to contact the undersigned at the number listed below.

Respectfully submitted,

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